

CLAIMS

1. A device for recording and playing back video signals comprising:
 - a portable storage device;
 - a portable storage device connector of a first type adapted to transfer video
 - 5 signals of a first type and which is mounted on the portable storage device;
 - a first video system having a first video system connector of the first type for directly connecting to the portable storage device connector to exchange video signals of the first type between the portable storage device and the first video system to record and playback video signals of the first type;
 - 10 a second video system for receiving video signals of a second type; and
 - an interface section having an interface section connector of the first type for directly connecting to the portable storage device, the interface section converting between the video signals of the first and second type, and exchanging the signals of the first and second type between the first video system and the second video system
 - 15 through the interface section connector of the first type and a signal connection between the interface section and the second video system.
2. The device of Claim 1, wherein the video signals of the first type and second type also include audio signals which are recorded and played back by the device.
- 20 3. The device of Claim 1 wherein the portable storage device comprises at least 8MB of non-volatile solid-state memory storing video data in compressed format and a built-in encoder/decoder engine for compressing and decompressing the video data.

4. The device of Claim 3, wherein the portable storage device further comprises a built-in microcontroller for controlling the solid-state memory and a protocol controller for converting the video data to and from video signals of the first type.

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5. The device of Claim 4, wherein the signal connection between the interface section and the second video system further comprises an interface connector of a second type mounted to the interface section for direct connection to a second video system connector mounted to the second video system for exchanging the signals of the second type through the interface section connector of the second type and the second video system connector of the second type.

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6. The device of Claim 5, wherein the first video system is a computer and the second video system is a television.

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7. The device of Claim 4, wherein:
the first video system is a computer;
the portable storage device connector is a USB male-type connector;
the first video system connector of the first type and interface connector of the first type are USB female-type connectors;
the video signals of the first type are USB protocol signals; and
the protocol controller is a USB controller.

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8. The device of Claim 4, wherein:

the first video system is a television;

the portable storage device connector is a HDMI connector;

the first video system connector of the first type and interface connector of the

5 first type are HDMI connectors;

the video signals of the first type are HDMI protocol signals; and

the protocol controller is a HDMI interface.

9. The device of Claim 7, wherein:

10 the second video system is a television;

the second video system connector of the second type is an HDMI connector;

the video signals of the second type are HDMI protocol signals;

the signal connection between the interface section and the second video system
connector is comprised of an HDMI connector mounted on the interface section for

15 direct connection to the second video system connector; and

the interface section converts between the USB and HDMI protocol signals.

10. The device of Claim 9, wherein the interface section comprises a microcontroller
for converting between the USB and HDMI protocol signals and wherein the

20 microcontroller is electrically connected between a USB controller connected to the
interface section connector of the first type and an HDMI controller connected to the
HDMI connector mounted on the interface section.

11. The device of Claim 4, wherein the interface section is integral with the second video system.

12. The device of Claim 4, wherein the interface section is integral with the portable
5 storage device.

13. The device of Claim 4, wherein the portable storage device 11, when in use, is not in signal communication with both the first and second video systems.

10 14. The device of Claim 4, wherein the interface section is encased in a housing separate from the portable storage device, the first video system and the second video system.

15 15. The device of Claim 2 wherein the portable storage device comprises at least 8MB of non-volatile solid-state memory storing the video data in compressed format, a built-in encoder/decoder engine, a built-in microcontroller, and a protocol controller working in cooperation to convert the video data between the compressed format and video signals of the first type, the format of the compressed data selected from the set consisting of: MPEG 1, MPEG 2, MPEG-4, MP3, MPEG 7 and MPEG 21.

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16. The device of Claim 15, wherein the built-in encoder/decoder engine is programmable by the computer to encode/decode different compressed data formats.

17. The device of Claim 3, further comprising a biometrics-based authentication module coupled to and controlled by the microcontroller, wherein access to the non-volatile memory is granted to a user provided that the biometrics-based authentication module authenticates the user's identity and wherein access to the non-volatile memory
5 is denied to the user otherwise.

18. The device of Claim 3, wherein the biometrics-based authentication module includes a thumbprint sensor for acquiring data from the thumbprint of the user.

10 19. The device of Claim 3, further comprising a key matrix coupled to the microcontroller to allow a user to control the recording and playing back of the video signals.

20. A device for recording and playing back audio and video signals comprising a
15 computer connector for direct connection to a computer and a separate television a/v connector for direct connection to a television.

21. The device of Claim 20, wherein the computer connector and television a/v connector are mounted to separate housings.

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22. A method for recording and playing back video signals comprising the steps of:

directly connecting a portable storage device connector of a first type mounted on a portable storage device to a first video system connector of the first type of a first video system;

transferring video signals of the first type from the first video system to the
5 portable storage device through the first video system connector and the portable storage device connector;

encoding the video signals into compressed video data using an encoder engine built-into the portable storage device;

storing the compressed video data in a memory section of the portable storage
10 device to record the video signals of the first type;

disconnecting the portable storage device connector of the first type from the first video system connector of the first type;

directly connecting the portable storage device connector of the first type mounted on the portable storage device to an interface section connector of the first type
15 of an interface section;

decoding the compressed video data into decoded video signals using a decoder engine built into the portable storage device;

passing the video signals of the first type through the portable storage device connector of the first type and the interface section connector of the first type into the
20 interface section;

converting the video signals of the first type into video signals of a second type by passing the signals through the interface section;

passing the video signals of the second type to a second video system through a signal connection between the interface section and the second video system; and playing back the video signals on the second video system.

5 23. The method of Claim 22, wherein the signal connection between the interface section and the second video system comprises an interface connector of a second type mounted to the interface section directly connected to a second video system connector mounted to the second video system for exchanging the signals of the second type through the interface section connector of the second type and the second video system
10 connector of the second type.

24. The method Claim 23, wherein the video signals of the first type and second type also include audio signals which are recorded and played back by the device.

15 25. The method of Claim 24 wherein the portable storage device comprises at least 8MB of non-volatile solid-state memory storing video data in compressed format and a built-in encoder/decoder engine for compressing and decompressing the video data.

20 26. The method of Claim 25, wherein the portable storage device further comprises a built-in microcontroller for controlling the solid-state memory and a protocol controller for converting the video data to and from video signals of the first type.

27. The method of Claim 26, wherein the first video system is a computer and the second video system is a television.

28. The method of Claim 27, wherein:

5 the first video system is a computer;

the portable storage device connector is a USB male-type connector;

the first video system connector of the first type and interface connector of the first type are USB female-type connectors;

the video signals of the first type are USB protocol signals; and

10 the protocol controller is a USB controller.

29. The method of Claim 26, wherein:

the first video system is a television;

the portable storage device connector is a HDMI connector;

15 the first video system connector of the first type and interface connector of the first type are HDMI connectors;

the video signals of the first type are HDMI protocol signals; and

the protocol controller is a HDMI interface.

20 30. The method of Claim 26, wherein:

the second video system is a television;

the second video system connector of the second type is an HDMI connector;

the video signals of the second type are HDMI protocol signals;

the signal connection between the interface section and the second video system connector is comprised of an HDMI connector mounted on the interface section for direct connection to the second video system connector; and

the interface section converts between the USB and HDMI protocol signals.

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31. The method of Claim 30, wherein the interface comprises a microcontroller for converting between the USB and HDMI protocol signals and wherein the microcontroller is electrically connected between a USB controller connected to the interface section connector of the first type and an HDMI controller connected to the
10 HDMI connector mounted on the interface section.

32. The method of Claim 26, wherein the interface section is integral with the first video system.

15 33. The method of Claim 26, wherein the interface section is integral with the portable storage device.

34. The method of Claim 26, wherein the portable storage device 11, when in use, is not in signal communication with both the first and second video systems.

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35. The method of Claim 26, wherein the interface section is encased in a housing separate from the portable storage device, the first video system and the second video system.

36. The method of Claim 24 wherein the portable storage device comprises at least 8MB of non-volatile solid-state memory storing the video data in compressed format, a built-in encoder/decoder engine, a built-in microcontroller, and a protocol controller
5 working in cooperation to convert the video data between the compressed format and video signals of the first type, the format of the compressed data selected from the set consisting of: MPEG 1, MPEG 2, MPEG 4, MP3, MPEG 7 and MPEG 21.

37. The method of Claim 36, wherein the built-in encoder/decoder engine is
10 programmable by the computer to encode/decode different compressed data formats.

38. The method of Claim 25, further comprising the step of:
granting a user access to the non-volatile memory based upon authentication of the identity of the user by a biometrics-based authentication module coupled to and
15 controlled by the microcontroller; and
denying the user access to the non-volatile memory otherwise.

39. The method of Claim 38, wherein the biometrics-based authentication module includes a thumbprint sensor for acquiring data from the thumbprint of the user.
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40. The method of Claim 25, further comprising the step of controlling the recording and playing back of the video signals using a key matrix coupled to the microcontroller.